**Lab 3:**

**Lab Exercise: Software Development Models**

**Objective:**

To understand the features, applications, and differences between various software development models: Waterfall, Spiral, V-Model, and Agile, and apply them to real-world scenarios.

**Lab\_exercise1: Identification and Mapping**

**Instructions:**

Match the following scenarios to the most appropriate Software Development Model. Justify your answer in 1-2 lines.

|  |  |  |
| --- | --- | --- |
| **Scenario** | **Model** | **Justification** |
| 1. A banking project where requirements are fixed and testing is required only after implementation. | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |
| 2. A mobile app where customer feedback plays a major role in shaping the features. | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |
| 3. A defense system requiring high reliability and where each phase requires testing against strict standards. | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |
| 4. A satellite launch software with high risk and evolving requirements. | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |

**Lab\_exercise2: Model Breakdown Analysis**

**Instructions:**

Fill in the table with **two pros** and **two cons** of each model.

|  |  |  |
| --- | --- | --- |
| **Model** | **Pros (2)** | **Cons (2)** |
| Waterfall | 1. \_\_\_\_\_\_\_\_\_\_\_  2. \_\_\_\_\_\_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_\_\_\_\_  2. \_\_\_\_\_\_\_\_\_\_\_ |
| Spiral | 1. \_\_\_\_\_\_\_\_\_\_\_  2. \_\_\_\_\_\_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_\_\_\_\_  2. \_\_\_\_\_\_\_\_\_\_\_ |
| V-Model | 1. \_\_\_\_\_\_\_\_\_\_\_  2. \_\_\_\_\_\_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_\_\_\_\_  2. \_\_\_\_\_\_\_\_\_\_\_ |
| Agile | 1. \_\_\_\_\_\_\_\_\_\_\_  2. \_\_\_\_\_\_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_\_\_\_\_  2. \_\_\_\_\_\_\_\_\_\_\_ |

**Lab\_exercise3: Project-Model Matching**

**Instructions:**

Below are four projects. Choose the most suitable model for each and explain why (2 marks for model, 1 mark for explanation):

1. **College Management System**  
   Model: \_\_\_\_\_\_\_\_\_\_\_  
   Justification: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Netflix Clone Application**  
   Model: \_\_\_\_\_\_\_\_\_\_\_  
   Justification: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. **Medical Device Software**  
   Model: \_\_\_\_\_\_\_\_\_\_\_  
   Justification: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. **Basic Calculator App**  
   Model: \_\_\_\_\_\_\_\_\_\_\_  
   Justification: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Lab\_exercise 4: Agile Sprint Simulation**

**Scenario:**  
You are developing a **To-Do List App** using the **Agile Model**.

**Instructions:**

1. Write **3 features** that will be developed.
2. Plan them over **2 sprints** (each sprint is 2 weeks).
3. Write what feedback you may expect after Sprint 1.

|  |  |  |  |
| --- | --- | --- | --- |
| **Feature** | **Sprint No.** | **Why in this Sprint?** | **Expected Feedback** |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 2. \_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| 3. \_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Lab\_exercise 5: Comparison Table Fill-in-the-Blanks (20 Marks)**

Fill in the missing information based on your understanding:

|  |  |  |
| --- | --- | --- |
| **Feature** | **Waterfall Model** | **Spiral Model** |
| Development Approach | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |
| Flexibility | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |
| Risk Handling | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |
| Testing Phase | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |
| Customer Involvement | \_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_\_\_\_\_\_ |

**Submission Instructions:**

* Submit answers in your notebook or as a Word/PDF file.
* Ensure clarity and neatness.